Summary of Board Meeting
September 23 & 24, 2004

Air Resources Board
Sheraton Gateway Hotel Los Angeles Airport
6101 West Century Boulevard
Los Angeles, CA 90045

MEMBERS PRESENT: Hons. Alan C. Lloyd, Ph.D., Chairman
Sandra Berg
Dorene D'Adamo
Mark DeSaulnier
Dr. Henry Gong
Barbara Patrick
Patricia Pineda
Barbara Riordan
Ron Roberts

AGENDA ITEM #

04-8-1: HEALTH UPDATE Impact of Climate Change on Public Health

SUMMARY OF AGENDA ITEM:

The health impacts of climate change are of increasing concern and may have a disproportionate impact on the poor and minority groups in U.S. cities. A publication in the Proceedings of the National Academy of Sciences projects major increases in the frequency, length, and intensity of heat waves for several California cities due to rising levels of greenhouse gases. These extreme temperature events are predicted to lead to many thousands of excess deaths over the next century. Last summer's heat wave in Europe caused at least 23,000 deaths and studies in England, Wales, and the Netherlands attributed 20 to 40 percent of the deaths to increased ozone and PM10 levels. For example, average June-to-August ozone levels in the Netherlands were 43 percent above the same months in 2000 – the most recent year with average summer weather – and PM10 levels were 13 percent higher. The poor in inner cities may be more severely impacted by these effects than other groups, due to a lack of air conditioning and other resources. The majority of those affected during the 1995 heat wave in Chicago were African-Americans living in substandard housing.

The Harvard Medical School reports that climate change may lead to increased allergen production from ragweed and increased vector-borne disease. Climate change can have a negative impact

on those with existing asthma, as increases in allergens, air pollution, and smoke affect asthmatics more than the general population. Low-income families and African-Americans will be at greater risk as they already have higher rates of asthma prevalence, and increased morbidity and mortality from asthma. Mosquitoes, which carry a number of infectious diseases, are highly sensitive to temperature, and warmer global temperatures will allow the expansion of the insect itself and the diseases that it carries.

Board Member Dr. Henry Gong commented that the allergen increase seen in ragweed with increased carbon dioxide could more than likely be seen in other plant species and that an increase in allergen production would have a marked impact on the population, particularly those with allergic disease. Board Member Ms. D'Adamo commented that the spread of vector-borne diseases, such as the recent increase in West Nile Virus, might also result in increased spraying for mosquito control.

ORAL TESTIMONY: None

FORMAL BOARD ACTION: None (Informational Item)

RESPONSIBLE DIVISION: Research Division

STAFF REPORT: No

04-8-3: CLIMATE CHANGE DETECTION AND ATTRIBUTION

SUMMARY OF AGENDA ITEM:

Dr. Benjamin Santer from the Program for Climate Model Diagnosis and Intercomparison, Energy and Environmental Directorate, Lawrence Livermore National Laboratory gave a presentation on the relationship between human activities and observed climate change. The purpose of his presentation was to introduce the Board to recent scientific developments on climate change to further prepare for the climate change regulations that were subsequently discussed.

Dr. Santer's research focuses on climate model evaluation, the use of statistical methods in climate science, and the identification of natural and anthropogenic "fingerprints" in observed climate records. Dr. Santer's early research on the climatic effects of combined changes in greenhouse gases and sulfate aerosols contributed to the historic "discernible human influence" conclusion of the 1995 Report by the Intergovernmental Panel on Climate Change. His recent studies illustrate that a human-induced climate

change signal is identifiable in many different aspects of the climate system.

Board Member Ms. D'Adamo asked follow-up questions regarding the implications of climate change on agriculture. Supervisor DeSaulnier inquired about the implications of increased salinity of the Delta region. Chairman Dr. Lloyd expressed appreciation for Dr. Santer's comments and indicated the relevance to the climate change regulatory item that followed.

ORAL TESTIMONY: None

FORMAL BOARD ACTION: None (Informational Item)

RESPONSIBLE DIVISION: Research Division

STAFF REPORT: No

04-8-2 Public Hearing to Consider Proposed Regulations and Related Test Procedures to Control Greenhouse Gas Emissions from Motor Vehicles

SUMMARY OF AGENDA ITEM:

The Board considered a staff proposal to adopt regulations to control greenhouse gas emissions from motor vehicles. The proposed regulations were brought before the Board in compliance with Chapter 200, Statutes of 2002 (AB 1493, Pavley) which directed the Board to adopt regulations that achieve the maximum feasible and cost effective reduction of greenhouse gas emissions from motor vehicles.

Since the industrial revolution, human activities have dramatically changed the composition of the atmosphere. The concentration of carbon dioxide in the atmosphere has risen since pre-industrial times, and is continuing to increase by approximately one-half percent per year. Human activities have also increased atmospheric concentrations of other greenhouse gases such as methane and nitrous oxide. Over the past century the northern hemisphere has warmed at a rate faster than at any other time over the last millennium. Scientific assessments have concluded that most of the global warming observed over the last fifty years is attributable to human activities.

Climate change threatens California's public health, water resources, agricultural industry, ecology, and economy. California is already experiencing climate change, and those impacts are

expected to be worse in the future. Although the scientific understanding of climate change and its effects continues to improve, it has been clear for quite some time that climate change poses a threat to California. Thus attention has been focused on this issue for many years, and the staff proposal builds upon a long history of previous climate change activity.

The proposal also builds upon longstanding California programs to control motor vehicle emissions. In developing the proposed regulation staff elected to incorporate the CO_2-equivalent emission standards into the current Low-Emission Vehicle (LEV) program along with the other light and medium-duty automotive emission standards. Accordingly, there is a CO_2-equivalent fleet average emission requirement for the passenger car/light-duty truck 1 (PC/LDT1) category and another for the light-duty truck 2 (LDT2) category, just as there are fleet average emission requirements for criteria pollutants for both categories of vehicles in the LEV program. The regulation includes near-term standards, phased in from 2009 through 2012, and mid-term standards, phased in from 2013 through 2016.

Taking into account the penetration of 2009 and later vehicles meeting the new standard into the fleet, staff estimates that the regulation will reduce climate change emissions from the light duty fleet by 18 percent in 2020 and by 27 percent in 2030. The staff analysis also projects that the regulation will reduce criteria pollutant emissions. Because the regulated vehicles will be more efficient, staff estimates that "upstream" NMOG and NOx emissions due to fuel production and distribution will be reduced by about 5 tons per day in 2020 and 10 tons per day in 2030.

Staff estimates that for large manufacturers the regulation would result in average compliance costs in model year 2009 of about $20 per vehicle for PC and LDT1 and about $40 per vehicle for LDT2. Compliance costs would increase over time as the standards are phased in, rising to about $1050 per vehicle for PC and LDT1 and $1000 per vehicle for LDT2 in 2016. Compliance costs for intermediate and small manufacturers would vary depending on their specific circumstances.

Using the average increase in vehicle prices associated with the fully phased-in regulation (2016), staff calculated the potential increases in monthly loan payments and decreases in operating cost. This methodology thus provides an estimate of the effect on individual consumers. The analysis concluded that on a monthly basis, the increased vehicle payment minus the reduction in operating cost would result in a net savings to vehicle owners ranging from about $3.00 to about $7.00.

The climate change regulation may impact several sectors of the economy. The steps that manufacturers take to comply with the regulatory standards are expected to lead to price increases for new vehicles. Many of the technological options that manufacturers choose to comply with the regulation are also expected to reduce operating costs. Based on the staff analysis, the net effect of the regulation on the economy is expected to be small but positive. It is very likely that savings from reduced vehicle operating costs would end up as expenditures for other goods and services. Staff's economic analysis shows that as these expenditures occur, jobs and personal income increase. State and local agencies will not be adversely impacted and are likely to realize a net reduction in their cost of fleet operations.

Staff also evaluated the "fleet turnover" and "rebound" effects as they relate to the climate change regulations. The fleet turnover effect is the potential for new vehicle purchasers to put off their purchase of new vehicles due to an increase in new vehicle price. The rebound effect is the tendency to drive more because the cost of driving is reduced. In both instances staff found that these effects and their concurrent effect on emissions were small.

After extended testimony at the Board Hearing, the Board approved the regulations while directing ARB staff to make modifications as proposed by staff and as the Board directed in the resolution. The regulation would take effect in 2006. The regulation will be sent to the Legislature for review in 2005 as provided for in the enabling legislation.

ORAL TESTIMONY:

Assembly Member Fran Pavley
Dr. Henry Clark, West County Toxics Coalition
Bob Roberts, California Ski Industry Association
James Boyd, California Energy Commission
Coralie Cooper, Northeast States Center for a Clean Air Future
David Shaw, New York State Department of Environmental Conservation
David Doniger, Natural Resources Defense Council
Fred Weber, Alliance of Automobile Manufacturers
Tom Austin, Sierra Research
John Cabaniss, Association of International Automobile Manufacturers
Dorothy Rothrock, California Manufacturers and Technology Association
Bob Lucas, California Council for Environmental and

Economic Balance
Michael Prather, University of California, Irvine
Michel Gelobter, Redefining Progress
Matt Peak, CALSTART
Dan Cayan, Scripps Institution
Bob Epstein, Environmental Entrepreneurs
Cynthia Rojas, Bus Riders Union
David Modisette, California Electric Transportation Coalition
John DeCicco, Environmental Defense
Felix Kramer, California Cars Initiative
Paul Wuebben, South Coast Air Quality Management District
Russell Long, Bluewater Network
Larry Allen - California Air Pollution Control Officers Association
Sujatha Jahagirdar, Environment California
Martha Arguello, Physicians for Social Responsibility
Tim Carmichael, Coalition for Clean Air
Dr. Trisha Roth, American Academy of Pediatrics California District IX, and Health Network for Clean Air
Brian Williams, Deputy Mayor, City of Los Angeles
Nancy Pfeifer, City of El Segundo
Brian Johnson, Managing Director, City of Santa Monica
Dennis Zane, American Lung Association
John A. Perez, United Food and Commercial Workers
Bahram Fazeli, Communities for a Better Environment
Eric Haxthausen, Environmental Defense
Kenneth Johnson, KJ Innovation
Joseph Kubsh, Manufacturers of Emission Controls Association
Laura MacCleery, Public Citizen
Brian Bunger, Bay Area Air Quality Management District
Larry Sherwood, Sacramento Air Quality Management District
Roland Hwang, Natural Resources Defense Council
Bonnie Holmes-Gen, American Lung Association
Louise Bedsworth, Union of Concerned Scientists
Wendy James, Clean Cars Campaign
John McNamara, California Refuse Removal Council
James Lyons, Sierra Research
Carlos Porras, Independent
John White, Sierra Club
Lewis Lem, American Automobile Association
Terry Tamminen, Secretary, Cal/EPA

FORMAL BOARD ACTION:

The Board approved, by a unanimous vote, Resolution 04-28 to adopt the proposed regulations and test procedures with modifications to the original proposal. The Board directed staff to prepare modified regulatory language and make information available to the public for a 15-day comment period.

RESPONSIBLE DIVISION: Mobile Source Control Division

STAFF REPORT: Yes